APRIL/MAY 2024

FEL31/CEL41/BEL41 — SEMICONDUCTOR DEVICES AND IC FABRICATION TECHNOLOGY

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. How does a transistor amplify?
2. Define current amplification factor.
3. What is the main application of FET?
4. Give any two differences between FET and BJT.
5. What is SCR?
6. Mention any two applications of UJT.
7. Define schottky effect.
8. What are the characteristics of MIM diode?
9. What is solar cell?
10. Expand : LASER.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the transistor as an amplifier.

Or

(b) Explain the neat diagram the working of transistor as an oscillator.

12. (a) Explain the working of Enhanced MOSFET.

Or

(b) Explain the characteristics of MOSFET.

13. (a) Explain the working OJT.

Or

(b) Describe the SCR as a switch.

14. (a) Explain the working principle of LDR.

Or

(b) Explain the function of photodiode.

15. (a) Explain the fabrication of capacitors.

Or

(b) Describe the method of fabrication of MOSFET.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the transistor characteristics in CE mode.

17. Explain the working of FET.

18. Illustrate the characteristics of TRIAC.

19. Explain the working and merits of CCD.

20. Describe the method of LSI and MSI and IC fabrication.

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